

Name: _____ Date: _____ HR: _____

Learning Set 1



1.3 Read: The Science of Structures

Read the introduction on p. 15. What are we going to be learning about before we build our next structure?



Matter: *Read this paragraph with your partner.*

List three examples of matter.

- 1.
- 2.
- 3.

What is volume?

Discuss with your partner and answer: How is an atom different from a molecule?

Gravity: *Read this section with your partner. Discuss with your partner and answer the following questions. (Be ready to answer for the class!)*



What is gravity?

What objects experience gravity?

Why are we able to observe the effects of Earth's gravity?

What is the connection between this paragraph and your challenge?



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Strong Structures: Read this section (top of p. 16) with your partner.

Draw a picture of folding:



Draw a picture of compression:



What makes a structure a “strong structure”?

Stable Structures: Read this section (bottom of p. 16-top of p. 17) with the class. With your partner, answer the following:



What makes a structure stable?

What happens when an object’s center of mass is not supported?

Structures with Columns: Read this section (bottom of p. 17-top of p. 18) with your partner. Identify two reasons columns make strong structures.

- 1.
- 2.



Reflect: Discuss the following questions with your table groups:

1. Was your structure strong? If not, did it collapse because of folding, compression, or both?
2. How could you make the structure stronger to resist folding or compression?

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3. *Was your book support stable? That is, did it provide support so that the book did not tip over?*
4. *What will you do to improve your procedure the next time you make this kind of observation?*
5. *What will you do to improve your observations and analysis for the next time?*
6. *Why do you think different groups made different observations and identified different categories?*

Vocabulary Review

On your own, write two sentences using at least four vocabulary terms from this section. The sentences should be written in a way that makes it clear that you know what the terms mean, but you shouldn't define the terms in the sentences. Terms: matter, volume, atom, molecule, gravity, strong, folding, compression, stable, center of mass, load

For example, if the terms are criteria and constraints, your sentence could be:

Our group was successful because we met all of the criteria, but it was really difficult because of the project's constraints.

1.

2.